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## **Our Consortium's Approach to a Nationwide Health Information Network Architecture**

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This presentation discusses a NHIN Architecture Prototype project made possible by a contract from the Office of the National Coordinator for Health Information Technology (ONC), DHHS. The content is solely the responsibility of the authors and does not necessarily represent the official view of ONC.

# Characteristics of our Distinct Health Markets



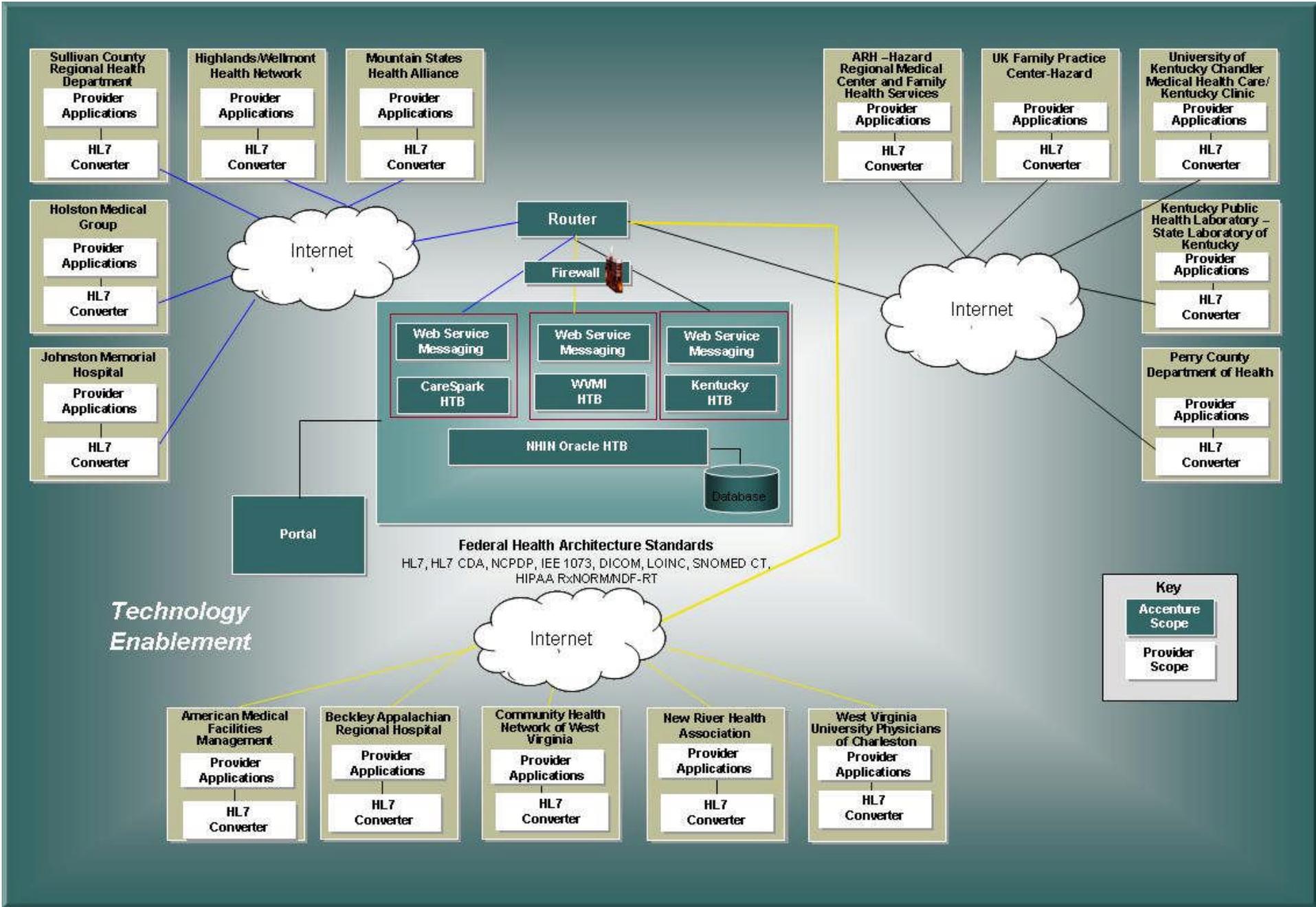
**Appalachian Region**

- Our location includes: CareSpark from the tri-cities region of northeastern Tennessee and southwestern Virginia; West Virginia eHealth Initiative; and Eastern Kentucky Regional Health Information Organization
- Characteristics of our distinct health care markets:
  - Rural
  - Have RHIOs but do not have regional information infrastructures for sharing health data
  - Hospital and provider systems are all different with few systems based on federal health standards

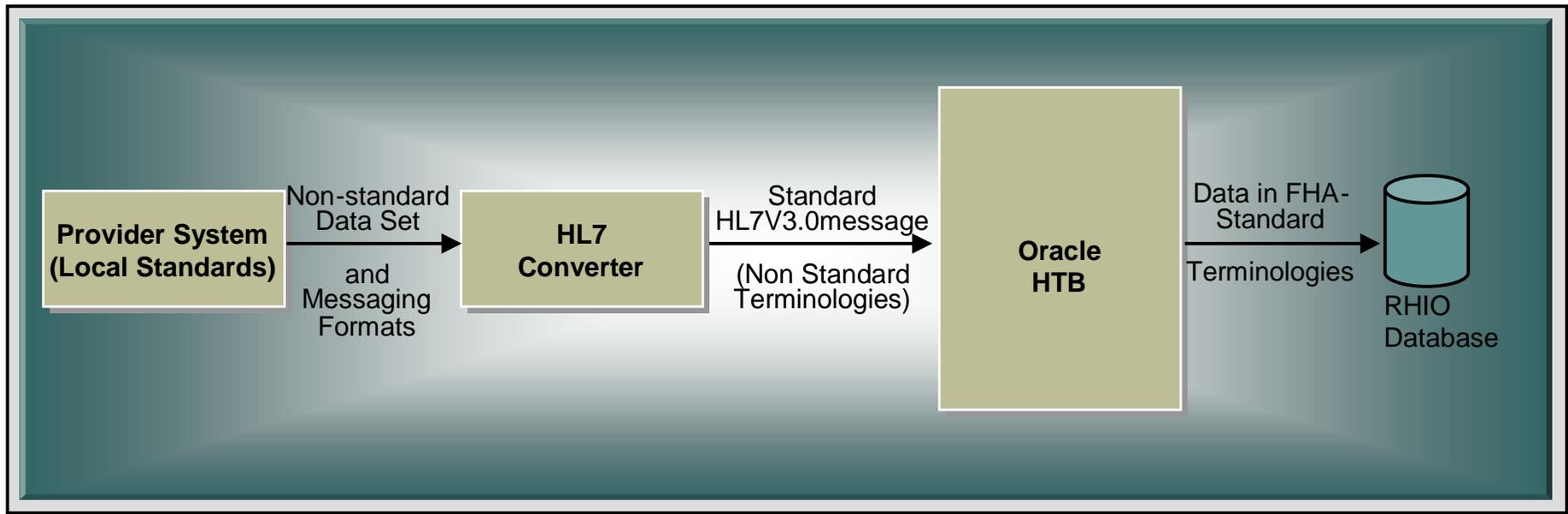
# Architecture Principles



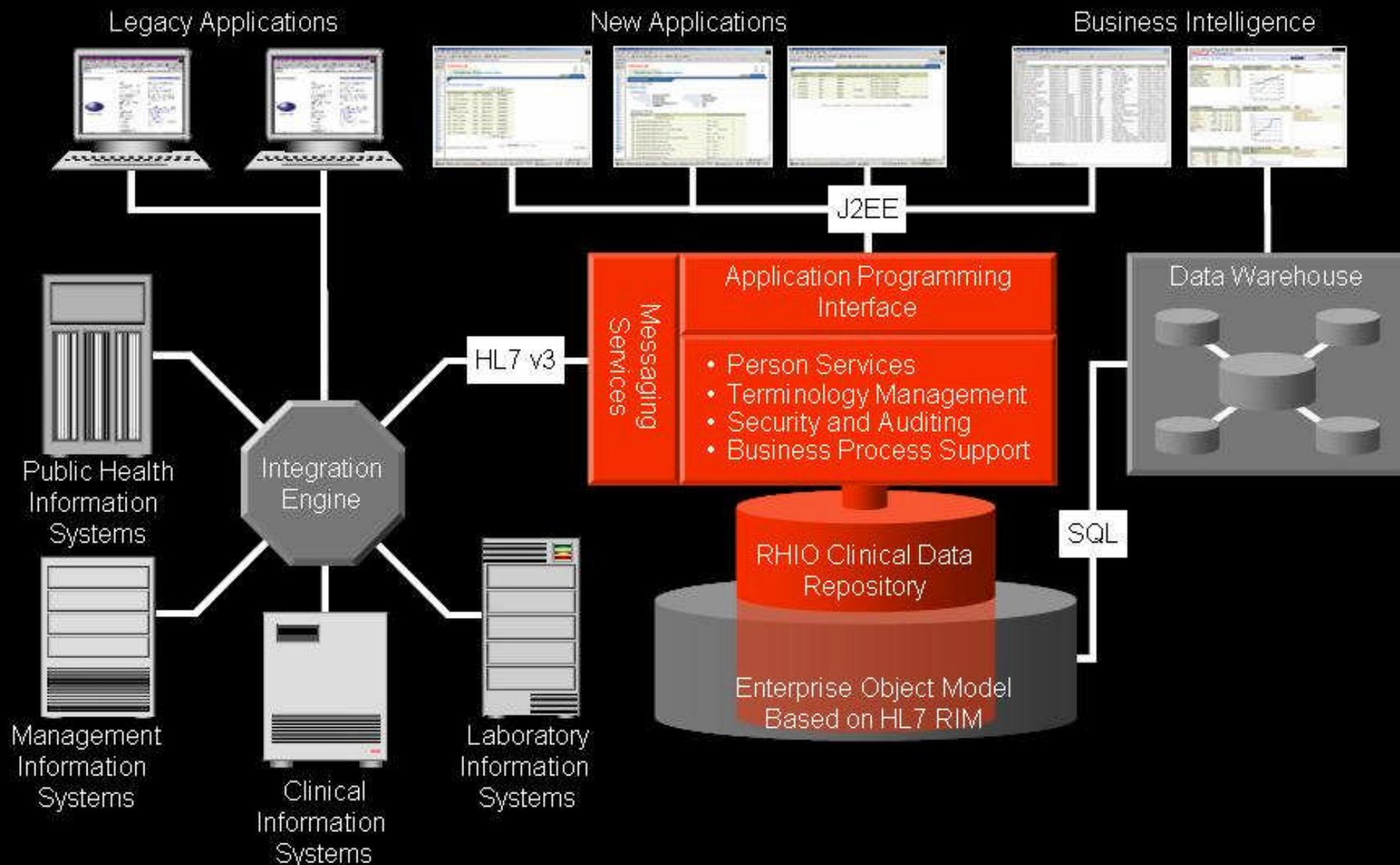
- Must support a working prototype that enables the three use cases
  - EHRs
    - EMPI/RLS, messaging and infrastructure to allow aggregated view of patient data
  - Consumer Empowerment
    - Sophisticated information governance model supporting patient choice
    - Flexible, hybrid approach to how much data is stored locally, regionally and nationally
  - Biosurveillance
    - Need for terminology/messaging services and standards to support robust data analytics
- Must be scalable
- Must have the capability to support future requirements such as clinical research and care management
- Must be component based and use Service Oriented Architecture principles



**Our approach results in the collection of data from multiple legacy systems that is normalized to the HL7 v3.0 message format and FHA terminology standards**



# Application Architecture



# Implications of Technical Approach



- Heavy emphasis on data standardization
  - Pros
    - Critical for public health, care management, clinical research
  - Cons
    - Hard to do!
- Sophisticated Information Governance
  - Pros
    - Critical for obtaining patient trust
  - Cons
    - Very difficult to establish common business rules
    - Impacts usability
- Flexible Architecture
  - Pros
    - Allows for increased control of where data resides (Federated vs. Centralized)
  - Cons
    - Increases technical complexity and impacts performance